Contents

Preface vii

Conference Editors ix

Congress Committees xi

I. Surface Structure

Recent advances in LEED surface crystallography
K. Heinz, M. Kottcke, U. Löffler and R. Döll 1

Hybrid surface structures formed on Cu(001) and Ag(001) by alkali-metal adsorption
H. Tochihara and S. Mizuno 10

An integrated approach to adsorbate structure determination using photoelectron diffraction: direct "imaging" and quantitative simulation
D.P. Woodruff, R. Davis, N.A. Booth, A.M. Bradshaw, C.J. Hirschmugl, K.-M. Schindler, O. Schaff, V. Fernandez, A. Theobald, Ph. Hofmann and V. Fritzsche 19

Adsorption reactions of Ti/Si(001) by variable-temperature STM
K. Ishiyama, Y. Taga and A. Ichimiya 28

Measurement of surface state conductance using STM point contacts
Y. Hasegawa, I.-W. Lyo and Ph. Avouris 32

MOS interface characterization by cross-sectional STM
T. Komeda, S. Gwo and H. Tokumoto 38

Room temperature deposition of gold onto the diffuse and sharp diffraction spot Si(111)-($\sqrt{3} \times \sqrt{3}$)R30° Au surfaces
R. Plass and L.D. Marks 42

Atomic structures of Ag on $\sqrt{3} \times \sqrt{3}$ Ag/Si(111) and on 7×7 Si(111)
A. Natori, M. Murayama and H. Yasunaga 47

Silver growth on Si(111)$\sqrt{3} \times \sqrt{3}$-Ag surfaces at low temperature
M. Lijadi, H. Iwashige and A. Ichimiya 51

Faceting of W(111) induced by Pd and Pt adlayers – a photoemission study
H.-S. Tao, C.-H. Nien, T.E. Madey, J.E. Rowe and G.K. Wertheim 55

A new approach to full multiple-scattering XAFS calculation
T. Fujikawa and N. Yiwata 60

Structure determination of Si(111)$\sqrt{3} \times \sqrt{3}$–Sb surface by X-ray diffraction
S. Nakatani, Y. Kuwahara, T. Takahashi and M. Aono 65

X-ray reflectivity for the complete determination of surface structures
T. Takahashi and S. Nakatani 69

STM studies of Si(*hhm*) surfaces with $m/h = 1.4$–1.5
T. Suzuki, H. Minoda, Y. Tanishiro, K. Yagi, H. Kitada and N. Shimizu 73

Study of the Si(001) clean surface structure using a six-circle surface X-ray diffractometer
M. Takahasi, S. Nakatani, Y. Ito, T. Takahashi, X.W. Zhang and M. Ando 78

Measurement of Si(100) surface morphology by low energy ion scattering spectroscopy
M. Matsui, F. Uchida, K. Nagakawa and A. Nishida 82

Structure of coupled carrier plasmon–polar phonon modes at semiconductor surfaces
T. Inaoka 87

Theoretical simulation of atomic-scale friction in atomic force microscopy
N. Sasaki, K. Kobayashi and M. Tsukada 92

The NiO(001) surface structure calculated by a two-dimensional polarizable point-ion shell model
H. Nakatsugawa and E. Iguchi 96

Phase transition of 12×1 reconstruction on Si(331)
H. Hibino and T. Ogino 102

Optical method for investigation of the kinetics of the Si(111) phase transition
T. Suzuki, A. Mikami, Y. Kimura, K. Uehara and M. Aono 107

AFM observation of monatomic step movements on NaCl(001) with the help of adsorbed water
H. Shindo, M. Ohashi, K. Baba and A. Seo 111

Measurement of reflectivity of high energy electrons from a molten indium surface
H. Watanabe, H. Sugiyama, T. Ichikawa and M. Hasegawa 115

Monte Carlo simulation of time-of-flight spectra of coaxial impact collision ion scattering spectroscopy applied to MoS_2(0001) and $SrTiO_3$(001)
T. Fuse, M. Watanabe, Y. Kido, O. Ishiyama, M. Shinohara and F. Ohtani 119

Spherical wave effects on ARXPS Debye–Waller factors
T. Yanagawa and T. Fujikawa 125

Multiple scattering approach to carbon XANES from benzene on Pt(111) surface
M. Yimagawa and T. Fujikawa 131

Structure of W(100) for NO adsorption studied by ESDIAD
H. Miki, H. Nomura, M. Kanou, K. Irokawa, T. Kioka and S. Sugai 135

An STM observation of silver growth on hydrogen-terminated Si(111) surfaces
M. Naitoh, A. Watanabe and S. Nishigaki 140

Surface structure sequences formed on Ag(001) with increasing alkali-metal coverages at room temperature
M. Imaki, S. Mizuno and H. Tochihara 145

Superstructure observation on a MgO(100) surface
H. Ota, K. Sakai, R. Aoki, N. Ikemiya and S. Hara 150

Electron irradiation effect on CaF_2(111) studied with He atom scattering
T. Miyake, E.S. Gillman, I. Oodake and H. Petek 155

Adsorption and decomposition of SiH_4 and surface silicide formation on Cu(111) studied by X-ray absorption fine structure spectroscopy
T. Kanazawa, Y. Kitajima, T. Yokoyama, S. Yagi, A. Imanishi and T. Ohta 160

STM study of Ar^+-induced defects produced by near-threshold energy collision
J.R. Hahn and H. Kang 165

Dynamic XPS measurements on bismuth molybdate surfaces
K. Uchida and A. Ayame 170

High-resolution electron energy loss spectroscopy on C_{60} and C_{70} ultrathin films
Y. Fujikawa, K. Saiki and A. Koma 176

Extraction of depth distributions of electron-excited Auger electrons in Fe, Ni and Si using inelastic peak shape analysis
D. Fujita, M. Schleberger and S. Tougaard 180

Surface relaxation of Fe(001) by ab initio molecular dynamics
T. Kishi and S. Itoh 186

A HREELS investigation of benzene/Pt(111): the $b_{2g}(\pi^*)$ resonance
O. Dippel, F. Cemič and E. Hasselbrink 190

Scanning tunneling microscopy and molecular orbital calculation of thymine and adenine molecules adsorbed on Si(100)2×1 surface
M. Kasaya, H. Tabata and T. Kawai 195

Formation of Ni(100)–Al surface alloy
D.J. O'Connor, M. Draeger, A.M. Molenbroek and Y.G. Shen 202

Visualization of tip–surface geometry at atomic distance by TEM–STM holder
Y. Naitoh, K. Takayanagi and M. Tomitori 208

Surface polytypic determination of niobium diselenide by RHEED
A.E. Smith, Y. Horio, H. Iwashige and A. Ichimiya 213

Energy distribution of field emission electrons from a niobium ⟨111⟩ tip
K. Nagaoka, H. Ogawa, N. Arai, S. Uchiyama, T. Yamashita, C. Oshima and S. Otani 218

Simulation of AFM/LFM by molecular dynamics: role of lateral force in contact-mode AFM imaging
M. Komiyama, K. Tsujimichi, K. Tazawa, A. Hirotani, H. Yamano, M. Kubo, E. Broclawik and A. Miyamoto 222

A15 type structure of ultrafine chromium particles studied by UHV-HRTEM
T. Onozawa and K. Takayanagi 228

Auger electron diffraction from NiO(100) layers on Ag(100)
K. Marre, H. Neddermeyer, A. Chassé and P. Rennert 233

II. Electronic Structure

One-dimensional electronic states on stepped surfaces of Ni studied by ARUPS
H. Namba, N. Nakanishi, T. Yamaguchi, T. Ohta and H. Kuroda 238

Full-hemisphere valence band photoemission spectra calculated for the ideal Si(001) surface
C.-H. Solterbeck, W. Schattke and C.S. Fadley 245

Shake-up satellites in high energy Auger spectra of the 4d metals
G.G. Kleiman, R. Landers and S.G.C. de Castro 251

Oxygen adsorption on a W(100) surface studied by optical reflectance spectroscopy
M. Tanaka, K. Ota, T. Tsutsumi and S. Usami 255

Calculated spin and angular resolved photoelectron diffraction spectra for magnetite
P. Rennert, W. Mück and A. Chassé 260

First-principles study on the Ga-rich GaAs(001)-(4 × 2) surface
T. Ohno 265

A dielectric matrix calculation of the surface-plasmon energy for the silicon (100) surface
A.J. Forsyth, A.E. Smith and T.W. Josefsson 270

Chemisorption of NO on Pt(111) studied by ARPES
K. Irokawa, H. Arai, J. Kobayashi, T. Kioka, S. Sugai, H. Miki and H. Kato 274

2D electron–ion system on crystal surface in polarization reversal, incommensurate state and surface phonon
W. Kinase, R. Naganuma, S. Saito, S. Kuwata and K. Takahashi 279

Electronic states of fullerenes adsorbed on Si surface
T. Yamaguchi and S. Miyoshi 283

Surface hybridization shift of the empty f spectral function in Ce compounds
L. Duò, P. Vavassori, L. Braicovich, M. Grioni and D. Malterre 289

Determination of the surface and bulk 4f spectral functions in Ce–Ir compounds
G. Chiaia, S. De Rossi, L. Duò, P. Vavassori, F. Ciccacci, G.L. Olcese and I. Lindau 293

4f binding energies and surface core-level shifts of Lu compounds
P. Vavassori, G. Bacchin, L. Duò, M.L. Fornasini and G.L. Olcese 298

De-excitation in solid $SiCl_4$ following deep-core excitation at the K-edge: relation between ion desorption and Auger decay
Y. Baba, K. Yoshii and T.A. Sasaki 302

Electronic states of monolayer hexagonal boron nitride formed on the metal surfaces
A. Nagashima, N. Tejima, Y. Gamou, T. Kawai and C. Oshima 307

Effects of oxygen termination on the electronic states of silicon quantum slabs
H. Kageshima 312

Scanning tunneling microscopy image of transition-metal–dichalcogenide surfaces
K. Kobayashi and J. Yamauchi 317

Theory of adsorption of Cl_2 molecules on GaAs(001) surfaces
T. Ohno 322

Surface sensitivity in self-consistent calculation of angle-resolved photoemission for Cu(100)
A. Ishii, T. Oguchi, K. Yamada and T. Aisaka 327

Inverse photoemission calculation of quantum well states for Co/Cu(100) and Cu/Co(100)
A. Ishii, T. Aisaki and K. Yamada 331

Nonequilibrium Anderson model, Coulomb blockade and scanning tunneling spectroscopy
K. Makoshi and T. Mii 335

First-principles studies for the α-Sn/InSb(111)A heterojunction interface
K. Yamamoto and K. Kobayashi 340

Band mapping of in situ Cs intercalated transition metal dichalcogenides
H.E. Brauer, H.I. Starnberg, H.P. Hughes and L.J. Holleboom 345

Potassium adsorption on the polar NbC(111) surface: core-level photoemission study
K. Ozawa, S. Tokumitsu, R. Sekine, E. Miyazaki, K. Edamoto, H. Kato and S. Otani 350

Electronic structure of monolayer C_{60} on Si(100)2×1 surface
A. Yajima and M. Tsukada 355

LT-STM/STS studies of Ag/Ge(100) surfaces: growth, Coulomb blockade and superconductivity
K. Hattori, Y. Takahashi, T. Iimori and F. Komori 361

Theoretical study of the valence photoelectron spectrum for nitride films on Si(111) surface
R. Sekine, H. Kataoka, S. Tokumitsu, K. Edamoto and E. Miyazaki 366

Energy spectra of field emission electrons from a W⟨310⟩ tip
H. Ogawa, N. Arai, K. Nagaoka, S. Uchiyama, T. Yamashita, H. Itoh and C. Oshima 371

Theoretical study of Al adsorption on the hydrogen-terminated Si(100) surface
Y. Tanida and M. Ikeda 376

Quenching of enhanced magnetic order at Ni–Al alloy surfaces by segregated sulfur and by Ar^+ impact
M. Polak, J. Deng and L. Rubinovich 381

III. Semiconductor Surfaces

Ballistic-electron emission microscopy as a probe for surface science
H. Sirringhaus, T. Meyer, E.Y. Lee and H. von Känel 386

Simulations for structural properties and crystal growth on Si(001) surface
K. Terakura, T. Uda, T. Yamasaki and T. Miyazaki 394

Chemical selectivity with ESD of chlorinated silicon species
Q. Guo, D. Sterratt and E.M. Williams 402

Dynamic observation of In adsorption on Si(111) surfaces by UHV high-temperature scanning tunneling microscopy
Y. Tanishiro, K. Kaneko, H. Minoda, K. Yagi, T. Sueyoshi, T. Sato and M. Iwatsuki 407

Roughening of the surface of an Si layer grown on an Si(111)-(7×7) superlattice
Y. Shigeta, J. Endo, H. Fujino and K. Maki 414

In situ TEM observations of surfactant-mediated epitaxy: growth of Ge on an Si(111) surface mediated by In
H. Minoda, Y. Tanishiro, N. Yamamoto and K. Yagi 418

Surface reconstruction and electronic properties of clean and hydrogenated diamond (111) surfaces
G. Kern, J. Hafner, J. Furthmüller and G. Kresse 422

Dangling-bond surface states on an amorphous germanium surface as observed by (e, 2e) spectroscopy
Y.Q. Cai, P. Storer, A.S. Kheifets, I.E. McCarthy and E. Weigold 427

The interaction of Cu atoms with the Si(111)-$\sqrt{3} \times \sqrt{3}$-Ag surface
D. Ishikawa, J. Yuhara, R. Ishigami, K. Soda and K. Morita 432

Space fluctuation of empty states on 3C-SiC(001) surface
S. Hara, J. Kitamura, H. Okushi, S. Misawa, S. Yoshida and Y. Tokumaru 436

Secondary electron imaging of nucleation and growth of GaAs
Y. Homma, J. Osaka and N. Inoue 441

Structural and doping properties of molecular beam epitaxy-grown Si-doped GaAs(001) surfaces
S. Gwo, H. Ohno, S. Miwa, J.-F. Fan and H. Tokumoto 446

First principles study of arsenic incorporation on a GaAs(001) surface during MBE growth
K. Shiraishi and T. Ito 451

Interface states in the Si band-gap obtained from XPS measurements under biases
H. Kobayashi, K. Namba, Y. Yamashita, Y. Nakato and Y. Nishioka 455

Adsorption structure of Ba on an Si(001)-(2 × 1) surface
T. Urano, K. Tamiya, K. Ojima, S. Hongo and T. Kanaji 459

Quenched Si(111)-DAS (dimer-adatom-stacking fault) structures studied by scanning tunneling microscopy
K. Miyake, M. Ishida, M. Uchikawa, K. Hata, H. Shigekawa, Y. Nannichi and R. Yoshizaki 464

Defect-induced Si(100) dimer buckling structures studied by scanning tunneling microscopy
M. Uchikawa, M. Ishida, K. Miyake, R. Yoshizaki and H. Shigekawa 468

Adsorption of gases on benzene-preplated graphite
H. Asada, M. Udaka, Y. Jitoue and J. Furukawa 472

Structural study of reconstructions at Si(110)–Pb surfaces
H. Oyama and T. Ichikawa 476

Interaction of oxygen with alkali metals at the Ge(001) surface studied by metastable deexcitation spectroscopy
K. Yamada, H. Iga, M. Naitoh and S. Nishigaki 481

A Monte Carlo simulation study on the structural change of the GaAs(001) surface during MBE growth
T. Ito and K. Shiraishi 486

Self-organizing modification of Si(111)-$\sqrt{3} \times \sqrt{3}$R30°-Ga surfaces on the nanometer scale
K. Fujita, Y. Kusumi and M. Ichikawa 490

Phonon localization in ion-irradiated GaAs
K. Ishioka, K.G. Nakamura and M. Kitajima 495

Theory on STM images of an Si(001) surface with steps
Y. Nakamura, H. Kawai and M. Nakayama 500

STM and tunneling current studies of a GaAs(001) surface prepared by deoxygenated and deionized water treatment
Y. Hirota and T. Fukuda 504

Atomic and electronic structures of oxygen-adsorbed Si(001) surfaces
T. Uchiyama and M. Tsukada 509

Molecular precursor of oxygen on Si(111)7 × 7 surface
K. Sakamoto, S. Suto and W. Uchida 514

Quantitative studies of step bunching dynamics on Si(111) induced by a current effect
T. Senoh, H. Minoda, Y. Tanishiro and K. Yagi 518

STM studies of Si(5 5 12)2 × 1 surfaces
T. Suzuki, H. Minoda, Y. Tanishiro, K. Yagi, T. Sueyoshi, T. Sato and M. Iwatsuki 522

Surface structures of $(NH_4)_2S_x$-treated GaAs studied by S K-edge X-ray absorption fine structure
S. Maeyama, M. Sugiyama and M. Oshima 527

Measurement of the tip–sample capacitance for Si surfaces
S. Kurokawa, M. Yuasa, Y. Hasegawa and A. Sakai 532

Anisotropy of vibrational polarizations associated with H on Si
S. Watanabe and Y. Sugita 536

Surface termination of GaAs(001) by Sb dimers
F. Maeda, Y. Watanabe and M. Oshima 540

3d core-level shifts at Se/GaAs(110)
W.G. Schmidt, P. Käckell and F. Bechstedt 545

UHV REM investigation of the interaction between steps and dislocation on silicon (111) surface II
A.V. Latyshev, H. Minoda, Y. Tanishiro and K. Yagi 550

H_2-TPD study on the difference in the growth kinetics between SiH_4- and Si_2H_6-GSMBE
M. Suemitsu, H. Nakazawa and N. Miyamoto 555

Multiple scattering study of X-ray photoelectron diffraction from Si(111)-$\sqrt{3} \times \sqrt{3}$-Ag surface
X. Chen, T. Abukawa, J. Tani and S. Kono 560

AFM tip induced selective electrochemical etching of and metal deposition on p-GaAs(100) surface
M. Koinuma and K. Uosaki 565

Floating phase in the lattice gas model of Ge(111)
Y. Sakamoto 571

Studies of surface stress by reflection electron microscopy and transmission electron microscopy
H. Tamura, K. Nishii, H. Minoda, Y. Tanishiro and K. Yagi 576

Effect of ultraviolet light irradiation on CVD-grown (100) and (111) diamond surfaces
N. Eimori, Y. Mori, A. Hatta, T. Ito and A. Hiraki 581

IV. Adsorption Dynamics

Femtosecond dynamics of hot-electron relaxation in Cu(110) and Cu(100)
S. Ogawa and H. Petek 585

Heavy ion–surface interaction at low energy: scattering of 3–300 eV Cs^+, Xe^+, and Ar^+ from the Si surface
M.C. Yang, C. Kim, H.W. Lee and H. Kang 595

Dynamics of the formation of HD from D(H) atoms colliding with H(D)/Cu(111): a model study of an Eley–Rideal reaction
C.T. Rettner and D.J. Auerbach 602

Chemisorption of small molecules on palladium in terms of local density functional calculations
T. Kito and M.E. Eberhart 609

Six-dimensional quantum dynamics of adsorption and desorption of H_2 at Pd(100): no need for a molecular precursor adsorption state
A. Gross, S. Wilke and M. Scheffler 614

The growth of oxygen adlayers on Ag(110)
D.A. Butler, A. Raukema and A.W. Kleyn 619

The adsorption of methanol on Ag(111) studied with TDS and XPS
H.G. Jenniskens, P.W.F. Dorlandt, M.F. Kadodwala and A.W. Kleyn 624

Electron excited states of NO/Cu(111) studied by high-resolution two-photon photoelectron spectroscopy
T. Munakata, T. Sakashita, M. Tsukakoshi and J. Nakamura 629

π-bonded ethene on Pt(111) surface studied by IRAS
J. Kubota, S. Ichihara, J.N. Kondo, K. Domen and C. Hirose 634

High resolution helium atom scattering from an epitaxially grown one monolayer film of KCN on KBr(001)
J. Baker, J.J. Hernández, J. Li, J.G. Skofronick, S.A. Safron and E.S. Gillman 639

Molecular adsorption of oxygen on transition-metal carbide
T. Aizawa, W. Hayami, R. Souda, S. Otani, T. Tanaka and Y. Ishizawa 645

SFG study of formic acid on a Pt(110)-(1 × 2) surface
N. Watanabe, K. Iwatsu, A. Yamakata, T. Ohtani, J. Kubota, J.N. Kondo, A. Wada, K. Domen and C. Hirose 651

Adsorption of bromochloroethane on GaAs(100)
N.K. Singh and A. Bolzan 656

Behavior of atomic hydrogen on Au(001)
H. Iwai, K. Fukutani and Y. Murata 663

Structural models for Sb on Si(113): an experimental and theoretical STM study
G. Wolff, H.-J. Müssig, J. Dąbrowski, W. Arabczyk and S. Hinrich 667

Desorption induced by electronic potential energy of multiply charged ions
K. Mochiji, N. Itabashi, S. Yamamoto, H. Shimizu, S. Ohtani, Y. Kato, H. Tanuma, K. Okuno and N. Kobayashi 673

Dissociative scattering of CF_3^+ from a barium-covered Ag(111) surface
W.R. Koppers, J.H.M. Beijersbergen, K. Tsumori, T.L. Weeding, P.G. Kistemaker and A.W. Kleyn 678

Promoted O_2 sticking on Li-covered Si(100)
T. Ohkubo, T. Muraoka and A. Namiki 684

Observation of angle-, mass- and energy-resolved ESD ions from the MgO(001) surface
T. Gotoh, Y. Fukunaga and S. Takagi 690

Photodissociation and desorption of multilayer acetone on a Si(100) surface by 193 nm laser irradiation
I. Kusunoki, M. Sakashita, T. Takaoka and H. Range 693

New desorption state of D_2 from deuterium-terminated Si(100) by potassium adsorption
S. Hongo, S. Taniguchi, N. Fujimoto, T. Urano and T. Kanaji 698

Molecular simulation of the desorption process on solid surfaces under vacuum and supercritical conditions
H. Takaba, M. Katagiri, M. Kubo, R. Vetrivel, E. Broclawik and A. Miyamoto 703

Oxygen adsorption on LaB_6 (100) and (111) surfaces
N. Yamamoto, E. Rokuta, Y. Hasegawa, T. Nagao, M. Trenary, C. Oshima and S. Otani 708

Surface phonon dispersion curves of the LaB_6(111) surface
E. Rokuta, N. Yamamoto, Y. Hasegawa, T. Nagao, M. Trenary, C. Oshima and S. Otani 712

Coverage and structure of deuterium on Cu(111)
G. Lee, D.B. Poker, D.M. Zehner and E.W. Plummer 717

V. Surface Reactions

Chemical reconstruction and catalysis of metal and bimetallic surfaces
K. Tanaka 721

Kinetics of initial oxidation of the Si(111)-7 × 7 surface near the critical conditions
A.A. Shklyaev and T. Suzuki 729

Direct observation of C_2H_6 evolution in the reaction of a hydrogen atom beam with C_2H_4 adsorbed on Cu(100) at 100 K
J.-Y. Kim, Y.-S. Park and J. Lee 733

Oxidation of ordered In overlayers on Si(111): an atomic picture of oxidation by STM
J. Kraft and F.P. Netzer 740

Oxygen adsorption on Ge-covered Si(100) surfaces
T. Fukuda and T. Ogino 748

Photoetching anisotropy of heavily doped Si(100) and Si(111) surfaces
T.N. Rhodin and C. Paulsen-Boaz 753

Studies on the reaction sites of carbon monoxide oxidation on platinum (113) by angle resolved thermal desorption
T. Yamanaka, Y. Ohno, A. Lesar, T. Matsushima and C. Moise 759

Reactive oxygen species on unreconstructed Cu(110); catalytic CO oxidation by reactive oxygen species at low temperatures
T. Sueyoshi, T. Sasaki and Y. Iwasawa 764

Activation of a thin film Pd catalyst for CO and ethanol oxidation by surface acoustic waves
Y. Watanabe, Y. Inoue and K. Sato 769

STM observation of surface reactions on a metal oxide
H. Onishi and Y. Iwasawa 773

Effects of resonance oscillation on catalytic activity of a thin Pd film deposited on polar ferroelectric surface
Y. Ohkawara, N. Saito and Y. Inoue 777

Off-normal emission of N_2 and normal emission of N_2O produced by the desorption mediated reaction of NO on Pd(110)
M. Ikai and K. Tanaka 781

Reactive carbon dioxide desorption on stepped Pt(112)
Y. Ohno, A. Barrera, A. Rar, T. Yamanaka, H. Sugimura and T. Matsushima 786

The surface reactions of ethene on Ru(001) studied by reflection–absorption infrared spectroscopy
P.M. Parlett and M.A. Chesters 791

Hydrogenation and H–D exchange reactions of ethylene on fcc ultra-thin Fe films grown on a Rh(001) surface
C. Egawa, S. Oki and Y. Murata 796

Collision-induced reaction of a fluorinated Si(100) by hyperthermal Xe atoms
K. Karahashi, J. Matsuo and B. Horiuchi 800

The study of alcohol induced hydrogen permeation in a catalytic membrane reactor
H. Dannetun, L. Wilzén and L.-G. Petersson 804

VI. Diffusion and Growth

Growth of epitaxial monolayers
M. Henzler 809

PEEM and REM studies of surface dynamics: electromigration and Cl adsorption and desorption
Y. Shidahara, K. Aoki, Y. Tanishiro, H. Minoda and K. Yagi 820

Effects of Si reconstruction on grwoth mode in Al/Si(111) studied by scanning tunneling microscopy
A. Uemura, A. Ohkita, H. Inaba, S. Hasegawa and H. Nakashima 825

Diffusion of a Si adatom on the Si(100) surface in an electric field
T. Kawai and K. Watanabe 830

Anomalous nucleation and growth of metal and alloy particles during vapor deposition on amorphous substrates
R. Anton and A.A. Schmidt 835

Thermal decay of silicon islands and craters on silicon surfaces by scanning tunneling microscopy
Y. Tanaka, K. Ishiyama and A. Ichimiya 840

Adatom migration mechanism at S_A steps on (001) surfaces of diamond structure crystals
M. Tsuda, M. Hata, Y. Shin-no and S. Oikawa 844

An STM, AES and LEED study of the segregated sulfur on Pd(111)
J. Bömermann, M. Huck, J. Kuntze, T. Rauch, S. Speller and W. Heiland 849

Surface morphology induced by homoepitaxial growth on a vicinal Si(111) surface
T. Yokoyama, T. Yokotsuka, I. Sumita and M. Nakajima 855

Domain growth of Si(111)-5 × 2 Au by high-temperature STM
T. Hasegawa, S. Hosaka and S. Hosoki 858

Pulsed trimethylgallium beam scattering from variously reconstructed GaAs surfaces
M. Sasaki and S. Yoshida 863

Thermal properties of anisotropic diffusion of Si adsorbates on a Si(001) surface
T. Doi, M. Ichikawa, S. Hosoki and K. Ninomiya 868

Growth and characterization of ultrathin Pt films on Cu(111)
U. Schröder, R. Linke, J.-H. Boo and K. Wandelt 873

Surface diffusion of Ag on Fe(110)
H. Noro, R. Persaud and J.A. Venables 879

Nucleation and morphology evolution in the epitaxial growth of CuCl on MgO(001) and CaF_2(111)
A. Yanase and Y. Segawa 885

Molecular dynamics simulation of the thin film fabrication process
S. Kato and H. Hu 891

Initial growth stage of CaF_2 on Si(111)-7 × 7 studied by high temperature UHV-STM
T. Sumiya, T. Miura and S. Tanaka 896

Forces of Pt adatom on a Pt(100) surface by the embedded-atom method
M. Katagiri, M. Kubo, K. Tsujimichi, A. Miyamoto, M. Komiyama, Y. Nozue, O. Terasaki, Y.S. Li and B. Vessal 900

Measurement of the kinetics of surface segregation via the linear heating method: an experimental evaluation
J. du Plessis and E.C. Viljoen 905

Surfactant effect of hydrogen for nickel growth on Si(111)7 × 7 surface
K. Murano and K. Ueda 910

Growth and annihilation of nickel silicide studied by scanning tunneling microscopy
M. Yoshimura, S. Shinabe and T. Yao 917

Thin film growth of Pt on Cu(111): a LEIS study
Y.G. Shen, D.J. O'Connor, K. Wandelt and R.J. MacDonald 921

Growth kinetics of aluminum on the Si(100) surface studied by scanning tunneling microscopy
C. Zhu, S. Misawa, S. Tsukahara and S. Fujiwara 926

Reactions of monolayer Fe with Si(001)-dihydride and -2 × 1 surfaces
M. Hasegawa, N. Kobayashi and N. Hayashi 931

Gold deposition on a Si(111)$\sqrt{3} \times \sqrt{3}$-Au surface
K. Fuchigami and A. Ichimiya 937

Thin film and surface alloy formation with Cu deposits on Pt(100)hex
J. Radnik, B.D. Wagner, K. Oster and K. Wandelt 943

High-temperature scanning tunneling microscopy on vicinal Si(111) and formation of ordered facets
T. Kampschulte, G. Wilhelmi and H. Neddermeyer 949

VII. Others

Production of dense and oriented structures including titanium nitride by energetic condensation from plasmas
D.R. McKenzie, W.D. McFall, H.H. Nguyen and Y. Yin 954

Muonium emission into vacuum from tungsten and iridium surfaces
A. Matsushita and K. Nagamine 961

Ar^+ ion recoil-implantation of Cu and Ag from the Si(111)-quasi-5 × 5-Cu and Cu/Si(111)-$\sqrt{3} \times \sqrt{3}$-Ag surfaces in the keV regime
D. Ishikawa, J. Yuhara, R. Ishigami, K. Soda and K. Morita 966

Author index 971

Subject index 981

Materials index 998